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ABSTRACT

This document, which is designed for use in developing a tech prep competency profile for the occupation of dental laboratory technician, lists technical competencies and competency builders for 13 units pertinent to the health technologies cluster in general and 8 units to the occupation of dental laboratory technician. The following skill areas are covered in the general units: employability; professionalism; teamwork; computer literacy; documentation; infection control and risk management; medical terminology; anatomy, physiology, and pathology; medical law and ethics; psychology of stress; psychology of human relations; first aid and medical emergencies; and general administrative duties. The 8 units specific to the occupation of dental hygienist list a total of 56 competencies in the following areas: oral anatomy and pathology, dental restoration, partial denture fabrication, orthodontics, dental morphology, dental materials I and II, and dental laboratory procedures. Among the competencies included are the following: identify selected anatomical structures; describe tooth arrangement, jaw relationships, tissue changes in response to physical/chemical injuries in the oral cavity, and developmental abnormalities; and describe/use selected materials, equipment, and procedures involved in making dentures and orthodontic appliances. (MN)

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TECH PREP

"GET SERIOUS . . . ABOUT SUCCESS"

CE070097

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Dental Laboratory Technician

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THE OHIO STATE UNIVERSITY

Dental Laboratory Technician

NOTE: Each TCP should respond to labor market demands in your area. Therefore, the following pages should be examined before being selected for use in TCP Part I (See "The TCP Process" Tab). For example, some units may not apply to your situation, nor might all the competencies within each unit be appropriate. Also, note that several units appear within each of the twelve occupations in this binder. Those "common" units should only appear once in the draft competency list for TCP Part I if you are compiling several occupations in a cluster format (See "TCP Matrix" Tab).

Units to Consider:	Page
Employability Skills	DLT-3
Professionalism	DLT-8
Teamwork	DLT-12
Computer Literacy	DLT-14
Documentation	DLT-15
Infection Control and Risk Management	DLT-16
Medical Terminology	DLT-23
Anatomy, Physiology, and Pathology	DLT-24
Medical Law and Ethics	DLT-31
Psychology of Stress	DLT-33
Psychology of Human Relations	DLT-35
First Aid and Medical Emergencies	DLT-38
General Administrative Duties	DLT-40
Oral Anatomy and Pathology	DLT-46
Dental Restoration	DLT-50
Partial Denture Fabrication	DLT-55
Orthodontics	DLT-57
Dental Morphology	DLT-60
Dental Materials I	DLT-61
Dental Materials II	DLT-63
Dental Laboratory Procedures	DLT-66

DON'T FORGET TO INSERT YOUR ACADEMIC COMPETENCIES HERE

Communications Literacy, Mathematics Literacy, Science Literacy, and Technology Literacy have been removed so that you may insert your own academic lists here.

COMMUNICATIONS LITERACY

(e.g., Reading, Writing, Speaking, and Listening)

MATHEMATICS LITERACY

(e.g., Algebra, Geometry, Trigonometry, Calculus)

SCIENCE LITERACY

(e.g., Physical Science, Environmental Science, Agriscience, Biology, Chemistry, Physics, Anatomy & Physiology)

TECHNOLOGY LITERACY

(i.e., the impact of technology on humans and their home, work, and play environments)

Unit: Employability Skills

Competency: Develop a career plan

Competency Builders:

Identify current interests and aptitudes
Identify common barriers to employment
Describe strategies to overcome employment barriers
Locate resources for finding employment
Research job trends
Identify career options
Identify advantages and disadvantages of career options (in addition to other than monetary)
Identify job requirements
Investigate education/training opportunities
Evaluate personal strengths and weaknesses

Competency: Prepare for employment

Competency Builders:

Identify traditional and non-traditional employment sources
Identify present and future employment opportunities (by geographic location)
Research job opportunities, including non-traditional careers
Compare salary ranges and benefit packages
Compile occupational profile
Identify rights and responsibilities of equal employment opportunity laws
Design resume and cover letter
Target resume
Secure references
Investigate generic and specific employment tests (e.g., civil service exam; drug screening)
Use follow-up techniques to enhance employment potential
Demonstrate legible written communication skills using correct grammar, spelling, punctuation, and concise wording
Describe methods for handling illegal questions on job application forms and during interviews
Write letter of application
Research prospective employer and services performed
Explain critical importance of personal appearance, hygiene, and demeanor
Interpret job description
Demonstrate appropriate interview question and answer techniques
Demonstrate methods for handling difficult interview questions
Evaluate job offers
Write letter of acceptance
Write letter of declination
Demonstrate good listening skills
Ask for the job tactfully
Participate in extracurricular activities (e.g., student government, community projects,)

Competency: Evaluate the importance of self-esteem as an employability skill

Competency Builders:

Identify factors that affect self-esteem
Compare effects of low self-esteem and high self-esteem
Identify strategies to promote positive self-esteem

Competency: Demonstrate job retention skills

Competency Builders:

Identify employer expectations regarding job performance, work habits, attitudes, personal appearance, and hygiene
Exhibit appropriate work habits and attitude
Demonstrate ability to set priorities
Identify behaviors to establish successful working relationships
Identify alternatives for dealing with harassment, bias, and discrimination based on race, color, national origin, sex, religion, handicap, or age
Identify opportunities for advancement
List reasons for termination
List consequences of being absent frequently from job
List consequences of frequently arriving late for work
Demonstrate interpersonal relations skills (i.e., verbal and written)
Demonstrate negotiation skills
Demonstrate teamwork
Follow chain-of-command
Exhibit appropriate job dedication

Competency: Demonstrate knowledge of work ethic

Competency Builders:

Define work ethic
Identify factors that influence work ethic
Differentiate law and ethics
Describe how personal values are reflected in work ethic
Describe how interactions in the workplace affect personal work ethic
Describe how life changes affect personal work ethic

Competency: Exhibit appropriate work ethic

Competency Builders:

Use time-management techniques
Avoid personal activity during work hours
Attend work as scheduled
Adhere to company and/or governmental policies, procedures, rules, and regulations
Exercise confidentiality
Demonstrate appropriate human relations skills
Adhere to rules of conduct
Accept constructive criticism
Offer constructive criticism
Take pride in work
Resolve conflict
Manage stress
Avoid sexual connotations and harassment
Adjust to changes in the workplace
Demonstrate punctuality
Assume responsibility for personal decisions and actions
Take responsibility for assignments
Follow chain-of-command

Competency: Apply decision-making techniques

Competency Builders:

Identify decision to be made
Identify ownership of decision to be made
Identify possible alternatives and their consequences
Make decisions based on facts, legality, ethics, goals, and/or culture
Apply time factor(s)
Present decision to be implemented
Evaluate decision made
Take responsibility for decision

Competency: Apply problem-solving techniques

Competency Builders:

Identify problem
Select appropriate problem solving tools/techniques
Identify root problem cause(s)
Track root problem cause(s)
Identify possible solutions and their consequences (e.g., long term, short term, crisis)
Use resources to explore possible solutions to problem
Contrast advantages and disadvantages of each solution
Identify appropriate action
Evaluate results
Identify post-preventive action

Competency: Exhibit characteristics for job advancement

Competency Builders:

Display positive attitude
Demonstrate knowledge of position
Perform quality work
Adapt to changing situations and technology
Demonstrate capability/responsibility for different positions
Identify characteristics of effective leaders
Identify opportunities for leadership in work place/community
Demonstrate initiative to affect change in workplace
Participate in continuing education/training program
Responds appropriately to criticism from employer, supervisor, or other employees
Exhibit awareness of corporate culture
Prepare for job setbacks
Exhibit continual growth based on performance evaluation
Set realistic goals

Unit: Professionalism

Competency: Project professional image

Competency Builders:

Define professionalism
Exhibit professional appearance
Exhibit professional manners
Project professional attitude
Identify individuals' vital role in organization
Exhibit proper etiquette in professionally-related situations

Competency: Achieve individual and professional goals

Competency Builders:

Set flexible, realistic, and measurable goals
Identify potential barriers to achieving goals
Identify strategies for addressing barriers to goal achievement
Breakdown long-term goals into short-term goals
Prioritize goals
Commit to goals
Adjust goals
Obtain support for goals
Reward goal achievement

Competency: Manage personal finances

Competency Builders:

Explain need for personal management records
Balance checkbook
Identify tax obligations
Analyze how credit affects financial security
Compare types and methods of investments
Compare types and methods of borrowing
Compare types and methods of insurance
Compare types of retirement options/plans
Identify discriminatory vs. non-discriminatory expenditures

Competency: Support community well-being

Competency Builders:

Identify environmental, educational, and social issues
Participate in social and/or community activities

Competency: Achieve organizational goals

Competency Builders:

Evaluate personal goals in relation to organizational goals
Monitor progress by evaluating feedback
List responsibilities in relation to organization goals
Accomplish assigned tasks
Exercise responsibility in relation to organizational goals
Set appropriate personal performance standards
Communicate goals with supervisor and peers
Demonstrate knowledge of products and services
Promote organizational image and mission

Competency: Demonstrate positive relations in the workplace

Competency Builders:

Identify personality types of self and other
Identify various management styles
Support employer expectations
Support employer decisions
Accept constructive criticism
Give constructive feedback
Adapt to changes in workplace
List factors to consider before resigning
Write letter of resignation

Competency: Manage stressful situations

Competency Builders:

Accept stress as part of daily life
Identify personal and professional factors contributing to stress
Describe physical and emotional responses to stress
Evaluate positive and negative effects of stress on productivity
Identify strategies for reducing stress
Implement strategies to manage stress
Create strategies for developing and maintaining support systems

Competency: Analyze effects of family on work and work on family

Competency Builders:

Identify how family values, goals, and priorities are reflected in work place
Identify responsibilities and rewards associated with paid and non-paid work
Identify responsibilities and rewards associated with families
Explain how family responsibilities can conflict with work
Explain how work can conflict with family responsibilities
Explain how work-related stress can affect families
Explain how family-related stress can affect work
Identify family support systems and resources
Identify work-related support systems and resources
Communicate with family regarding work

Competency: Apply lifelong learning skills

Competency Builders:

Define lifelong learning
Identify factors that cause need for lifelong learning
Analyze effects of change
Identify reasons why goals change
Describe importance of flexibility and adaptability
Evaluate need for continuing education/training

Competency: Manage professional development

Competency Builders:

Identify career opportunities
Modify career plan
Participate in continuing education/training opportunities
Document continuing education/training
Read profession-related manuals, technical journals, and periodicals
Attend meetings, workshops, seminars, conferences, and demonstrations
Participate in professional organizations
Build personal/professional mentor relationship
Build personal/professional support system
Build professional network
Strengthen communication skills
Strengthen leadership skills
Strengthen management skills

Unit: Teamwork

Competency: Demonstrate knowledge of teamwork

Competency Builders:

Define empowerment
Differentiate work groups and teams
Identify conditions essential to teamwork (e.g., brainstorming)
Explain influence of culture (e.g., corporate, community) on teamwork
Identify appropriate situations for using teams
Define team structures (e.g., cross functional, quality improvement, task force, quality circles)
Identify team building concepts
Describe characteristics and dynamics of teams
Identify characteristics of effective team leaders and members
Identify responsibilities of a valuable team member
Identify methods of involving each member of a team
Explain how individuals from various backgrounds contribute to work-related situations (e.g., technical training, cultural heritage)
Explain the purpose of facilitators
Define consensus
Define reward/recognition system

Competency: Demonstrate teamwork

Competency Builders:

Identify purpose of team and intended goal (include time frames)
Structure team around purpose
Define responsibilities of team members
Contribute to efficiency and success of team
Work toward individual and team milestones
Analyze results of team project
Facilitate a team meeting
Assist team member(s) with problem
Monitor time frame
Stress continuous improvement
Accept failure as part of learning

Competency: Use teamwork to solve problems

Competency Builders:

Identify appropriate situations for using teams
Use problem-solving process in a team setting
Identify quality management processes/techniques
Identify quality assurance processes/techniques
Prepare presentation

Competency: Conduct team meetings

Competency Builders:

Plan agenda
Schedule meeting and location
Invite appropriate personnel
Solicit outside speakers as needed
Assign someone to take minutes
Facilitate introductions
Invite questions and comments and group participation
Focus team on agenda items
Assign appropriate action, time frame and accountability to tasks
Monitor time
Close meeting on time
Publish minutes in timely manner
Set ground rules
Avoid placing individual agendas above the group's agenda

Unit: Computer Literacy

Competency: Describe personal computer operations

Competency Builders:

Explain how data is stored in main computer memory
Explain how computer system executes program instruction
Explain computer storage capacity
Explain how data is represented
Describe data storage techniques
Identify types of memory

Competency: Operate computer hardware

Competency Builders:

Practice proper media handling techniques
Identify hardware and its use
Use hardware (e.g., mouse, modems, touch screen, printers, digitizers, scanners)
Keyboard efficiently
Demonstrate basic care of hardware
Explain need for and application of security levels/procedures

Competency: Use software

Competency Builders:

Define software types and functions
Perform functions necessary to operate software
List advantages and disadvantages of integrated and dedicated software
Operate system software
Demonstrate basic use of spreadsheets
Demonstrate word processing skills
Demonstrate basic use of databases
Demonstrate system commands
Apply security levels/procedures while handling sensitive data

Unit: Documentation

Competency: Demonstrate proficiency in technical documentation

Competency Builders:

Record data
Maintain test logs
Compile cumulative reference notebook/record

Competency: Demonstrate proficiency in technical report writing

Competency Builders:

Write out procedures
Design charts and graphs
Outline reports
Write reports
Present resports
Complete equipment failure reports
Compose technical letters and memoranda
Write formal reports
Demonstrate ability to use cross reference/technical manuals

Unit: Infection Control and Risk Management

Competency: Comply with local, state, and federal regulations

Competency Builders:

Explain state and federal governmental roles in universal precautions as outlined by the Centers for Disease control (CDC)
Comply with Occupational Safety and Health Administration (OSHA) regulations
Explain purpose of Material Safety Data Sheets (MSDS)
Comply with Environmental Protection Agency (EPA) regulations
Report communicable diseases to local health authorities
Use precautions to prevent contamination
Demonstrate use of fire and safety equipment
Correct safety hazards
Write incident reports for accidents or safety infractions

Competency: Comply with environmental safety standards, accident prevention methods, and disaster plans

Competency Builders:

Observe environmental safety rules of facility
Identify potential hazardous situations
Explain universal precautions to transmission of infectious diseases (e.g., HIV/AIDS, hepatitis)
Identify fire prevention methods, fire control, fire alarm systems, and fire reporting procedures
Demonstrate use of fire extinguisher
Identify facility disaster plan
Demonstrate safety precautions for using equipment
Demonstrate safety precautions for using liquids and poisonous substances
Conduct safety inspection of client area
Correct safety hazards (e.g., spills)
Complete incident reports for accidents or safety infractions
Identify legal implications of accidents in health care facility
Explain potential sources of hazards, (e.g., fire, electrical, chemical, biological, radioactive)
Follow procedures for hazardous situations (e.g., eye and face wash, shower, fire extinguishers)
Store materials properly
Label materials properly
Follow manufacturer's instructions for safe operation of all equipment and instruments

Competency: Maintain personal safety and hygiene

Competency Builders:

Use universal precautions
Demonstrate isolation techniques
Wash hands aseptically
Use eye/faceshield protection
Wear gloves
Wear mask
Wear uniform or professional attire
Apply principles of aseptic techniques and sterility
Practice proper hygiene
Immunize self against communicable diseases
Complete incident reports as required
Demonstrate proper body mechanics
Demonstrate safe and effective sterilizing methods for instruments and equipment
Demonstrate safe and effective use of safety equipment
Identify at-risk behaviors which promote the spread of HIV/AIDS and/or hepatitis
Differentiate fact from fallacy regarding the transmission of HIV/AIDS and hepatitis
Identify principles of ergonomics
Identify common causes of back injuries
Demonstrate proper body mechanics involved in lifting, moving, transferring, ambulating, and positioning patient

Competency: Maintain infection control of work area

Competency Builders:

Identify modes of transmission of infection
Identify methods for preventing infection transmission
Differentiate between bacteriostatic and bacterialcidal
Identify disinfection techniques
Define "nosocomial infection"
Identify terms related to cleaning and disinfecting
Outline measures to be taken to clean and disinfect
Outline flow of dirty equipment and materials
Contain used linens
Isolate contaminated linens
Clean work areas
Disinfect work areas

Competency: Apply aseptic and sterilizing principles

Competency Builders:

Read and follow manufacturer's instructions for safe operation of all equipment and instruments
Maintain infection control
Prescrub instruments
Disinfect instruments
Sterilize instruments
Operate sterilizing equipment
Store sterilized equipment and supplies
Maintain quality-control log
Define asepsis
Identify methods for sterilizing and disinfecting reusable equipment
Define spore strip and how it is used to guarantee sterilization
Explain why dating of sterilized equipment is necessary
Explain why proper documentation of disinfection and sterilization procedures is necessary

Competency: Dispose of waste materials in compliance with government regulations

Competency Builders:

Practice safe, sanitary, and sterile procedures
Dispose of noninfectious waste
Dispose of infectious waste
Dispose of hazardous waste
Dispose of controlled substances
Dispose of needles and sharp instruments properly

Competency: Demonstrate isolation techniques

Competency Builders:

Describe different types of isolation
Demonstrate mask, gown, and gloving techniques
Demonstrate use of protective eyewear/faceshield
Demonstrate double bagging technique
Demonstrate procedures for disposal of soiled materials
Provide care for patient using isolation technique
Collect specimen from isolation patient
Disinfect isolation unit

Competency: Maintain patient safety

Competency Builders:

Apply restraints (e.g., soft, vest)
Monitor use of restraints
Utilize gait belt
Assist patient to walk with assistive ambulation devices
Demonstrate safe usage of patient transport equipment
Demonstrate safe handling of patient medical equipment (e.g., IV's, catheters, oxygen tubing)
Identify proper bed height
Position patient maintaining proper body alignment, supporting body parts
Demonstrate patient transfer techniques
Identify safety needs of medicated patient
Demonstrate usage of side rails
Identify placement of patient call device
Orient patient to surroundings

Competency: Explain sexually transmitted diseases (STDs)

Competency Builders:

Differentiate fact from fallacy regarding the transmission and treatment of STDs
Identify community resources and services available to victims of STDs
Identify at-risk behaviors which promote the spread of AIDS
Describe infection control techniques designed to prevent the spread of STDs

Competency: Practice quality control

Competency Builders:

Identify quality control parameters
Maintain quality control parameters
Prepare quality control charts and graphs
Calculate means, standard deviations, and coefficients of variation
Identify trends, shifts, and "out of control" situations
Address "out of control" situations
Identify bias in control systems
Maintain quality control procedure manual (including laboratory policies; laboratory organization and personnel definition; procedure for collection, labeling, andtransportation of specimens; work sheets; log books, and reporting of results; instructions for processing specimens; laboratory saftey related to biological, chemical, mechanical, and electrical hazards and the disposal of contaminated materials; monitoring quality control of equipoment, media, reagents, and stains)

Competency: Conduct proficiency testing

Competency Builders:

Explain rules and regulations regarding proficiency testing (i.e, acceptable parameters for constituents, laboratory areas address by proficiency testing, and rules of inspecting agencies and Medicare-approved systems)
Explain the construction of blind and double-blind studies
Compare peer results
List sources of proficiency testing materials
Process proficiency testing materials

Unit: Medical Terminology

Competency: Use common medical symbols, abbreviations, and acronyms

Competency Builders:

Identify commonly used symbols (e.g., O_2)
Write out full names of commonly used acronyms (e.g., IV, PACU, IPPB, CPAP)
Write out full names of commonly used abbreviations (e.g., bx= biopsy)
Spell medical terms correctly
Demonstrate use of Roman numeral system

Competency: Demonstrate knowledge of medical terminology

Competency Builders:

Define, spell, and pronounce basic Greek and Latin prefixes and suffixes
Spell basic Greek and Latin prefixes and suffixes
Pronounce basic Greek and Latin prefixes and suffixes
Identify principal terms relating to the body as a whole (e.g., ambulation, hypothermia)
Define terms related to the integumentary system
Define terms related to the skeletal system
Define terms related to the muscular system
Define terms related to the nervous system
Define terms related to the circulatory/cardiovascular system
Define terms related to the lymphatic system
Define terms related to the respiratory system
Define terms related to the digestive system
Define terms related to the endocrine system
Define terms related to the urinary system
Define terms related to the reproductive system
Define terms related to the senses
Define terms related to immunology
Define terms related to pathology

Unit: Anatomy, Physiology, and Pathology

Competency: Demonstrate general knowledge of basic chemistry

Competency Builders:

Identify elements on periodic table
Design simple chemical formulas
Contrast atoms verses molecules
Define synthesis, decomposition, and exchange reactions
Define diffusion, filtration, and osmosis
Differentiate between acids and bases

Competency: Demonstrate general knowledge of the human body

Competency Builders:

Define anatomy and physiology and explain their relationship
Describe the anatomical position
Identify body directions, planes, and cavities
Name the major organ systems and their functions
Classify major organs by the organ system they are within
Define cell composition, shape and size
Identify cell regions and organelles and explain their function
Identify basic life processes of cell division and transportation
Identify the four major tissue types, their function and subtypes
Define neoplasm and distinguish between benign and malignant
Describe effect of aging across the lifespan

Competency: Demonstrate knowledge of the integumentary system

Competency Builders:

List the functions of the integumentary system
Describe skin's response to touch/pressure, temperature, and pain
Name the layers of the skin
Identify structures associated with the skin, hair, hair follicle, sebaceous gland, and sudoriferous gland
Name the major body membranes
Identify common skin disorders
Describe common types of skin lesions

Competency: Demonstrate knowledge of the skeletal system

Competency Builders:

List functions of the skeletal system
Name methods of classifying bone
Identify bone types within each classification method
Explain the structure and function of a long bone
Describe the composition of bone
Define function and dysfunction of bone marrow
Explain the process of bone formation and growth
Identify major bones of the human skeleton
Name types of bone markings and their associated terms
Define joint and describe the typical structure of a joint
Name categories of joints
Compare the amount of movement allowed by each type of joint
Define types of motion
Identify various types of fractures
Identify the various methods of correction for fractures
Identify common disorders and injuries of bones and joints

Competency: Demonstrate knowledge of the muscular system

Competency Builders:

Identify types of muscle tissue
Describe muscle contraction
Define the parts of a muscle and explain major muscle types
Define muscle tone, isotonic and isometric contractions
Name types of movements produced by skeletal muscle contractions
Identify the major muscles of the human body
Identify common abnormal conditions of the muscles
Identify origin, insertion and function of muscles
Describe common disorders and injuries of the muscles

Competency: Demonstrate knowledge of the nervous system

Competency Builders:

Describe the general functions of the nervous system
Identify the main parts of the nervous system
Name principle cell types that compose the nervous system
Describe the neuron, its function, and the existing types of neurons
Describe the neuralgia, its function, and the existing types of neuralgia
Define ganglia, nuclei, tracts and nerves, noting their differences
Describe the events of the nerve impulse
Identify parts of the brain
Describe structures and functions of the various parts of the brain and spinal cord
Explain function of the autonomic nervous system and its divisions
Describe common disorders and injuries of the nervous system

Competency: Demonstrate knowledge of the circulatory/ cardiovascular system

Competency Builders:

Identify the structures and functions of the heart
Trace the pathway of blood through the heart
Describe routes of blood circulation
Define blood pressure, pulse, systole, diastole and cardiac cycle
Describe the pathway of impulses through the heart's conduction system
List factors that influence heart rate
Identify the structure and function of the blood vessels - arteries, veins and capillaries
Identify major blood vessels
Identify structures involved in fetal circulation
Identify several pulse points
Identify major components of blood
Identify the blood types
Describe the blood clotting process
Describe common disorders of the circulatory/cardiovascular system

Competency: Demonstrate knowledge of the lymphatic system

Competency Builders:

Name the structures composing the lymphatic system
Identify the functions of the lymphatic system
Explain the relationship between the lymphatic system and the cardiovascular system
Explain the immune response in relationship to the lymphocytes
Define antigens
Define antibodies and ways in which antibodies act against antigens
Differentiate between active and passive immunity
Describe common disorders of the lymphatic system

Competency: Demonstrate knowledge of the respiratory system

Competency Builders:

Identify major respiratory system organs and structures describing the function of each
Describe the function of major respiratory system organs and structures
Define cellular respiration, external respiration, internal respiration, ventilation, expiration and inspiration
Describe the process of gas exchange in the lungs and the tissues
Explain role of the respiratory muscles in breathing
Identify brain areas involved in the control of respiration
Explain respiratory volumes and capacities
Describe a common disorders and injuries of the respiratory system

Competency: Demonstrate knowledge of the digestive system

Competency Builders:

Identify the structures and functions of the digestive system
Describe the mechanisms of mastication, swallowing, vomiting and defecation
Define anabolism and catabolism
Define basal metabolic rate and total metabolic rate
Describe common disorders of the digestive system

Competency: Demonstrate knowledge of the endocrine system

Competency Builders:

Differentiate between endocrine and exocrine glands
Identify major endocrine glands and hormones produced by each
Explain response of body systems to hormones
Describe common endocrine gland disorders

Competency: Demonstrate knowledge of the urinary system

Competency Builders:

Identify components of the urinary system
Explain the functioning of the urinary system
Identify nitrogenous waste found in the urine
Explain how water and electrolyte balance is maintained by the body
Define micturition
Explain how micturition occurs
Describe common disorders of the urinary system

Competency: Demonstrate knowledge of the reproductive system

Competency Builders:

Explain the general function of the reproductive system
Identify major organs of the reproductive system
Describe the phases of the menstrual cycle
Explain the process of meiosis, spermatogenesis, and oogenesis
Identify stages of embryonic development
Explain the physiology of childbirth
Describe common disorders of the reproductive system

Competency: Demonstrate knowledge of the senses

Competency Builders:

Identify major structures and functions of vision, hearing, balance, smell, taste, and touch
Define refraction, accommodation, real image, and emmetropic
Describe common disorders and injuries of the senses

Competency: Demonstrate knowledge of immunology

Competency Builders:

Explain the immune response in relationship to the lymphocytes
Define antigens and antibodies
Explain the differences among the five major classes of antibodies
Describe the relationship between antigens and antibodies
Differentiate between active and passive immunity
Describe common immunodeficiencies, allergies, and autoimmune disorders

Unit: Medical Law and Ethics

Competency: Comply with medical law and ethics

Competency Builders:

Differentiate between legal and ethical behavior
Explain terms, principles, and characteristics of legal and ethical behavior
Explain state and federal rules and regulations governing the practice of the profession
Explain legal ramifications of breaching rules and regulations
Explain effects of unethical and/or unlawful behavior of health care professionals
Practice within the role and scope of the profession as defined by law, job description, and facility/arena of practice

Competency: Exhibit ethical behavior

Competency Builders:

Describe ethical dilemma in health care (e.g., death and dying, medical ethics committees)
Explain health care professional's responsibility in situations of patient abuse and neglect
Explain health care professional's responsibility in situations of coworker chemical addition
Identify personal, societal, and global implications of substance use and abuse
Explain effects of unethical behavior of health care professionals

Competency: Describe legal ramifications of misconduct

Competency Builders:

Explain terms, principles, and characteristics of legal and ethical behavior
Explain legal and ethical ramifications of breaching patient confidentiality

Competency: Practice discretion regarding patient information

Competency Builders:

Identify components of Patient Bill of Rights
Communicate patient's rights
Identify patient's rights and responsibilities
Describe reasons for sharing patient information
Identify appropriate persons to whom information can be released
Describe methods of maintaining confidentiality
Explain truth-in-ending law
Explain anatomical gift act
Explain advance directives
Explain living will
Explain informed consent
Identify reasons for termination of patient services
Explain consequences of noncompliance with physician's recommendations
Explain remuneration
Describe impact of communicable diseases
Describe the importance of proper sample identification

Competency: Practice personal professional protocol with medical community

Competency Builders:

Explain process of certification/licensure of health professionals
Comply with tax requirements
Maintain integrity of personal files
Explain the statute of limitation
Identify ownership of medical records
Maintain procedures for legal access to patient and/or records
Investigate professional liability coverage options

Unit: Psychology of Stress

Competency: Analyze factors that influence a patient's response to stress

Competency Builders:

Explain stress as a concept
Differentiate between stress and stressors
Explain how an individual's perception of stress influences his response to stressors
Explain how internal and external mitigating factors influence one's response to stress
Identify coping mechanisms used to decrease stress
Identify biological adaptive responses to stress

Competency: Analyze physiological response to stress

Competency Builders:

Describe the stress response on the autonomic nervous system, endocrine system, cardiovascular system, renal system, respiratory system, and hemopoietic system
Explain how the internal and external non-specific mitigating factors relate to the physiological stress response
Differentiate between immune systems response to stressors in children and adults
Explain how the concept of stress relates to activation of the disease process

Competency: Analyze psychological response to stress

Competency Builders:

Identify psychological stressors
Describe the relationship between personality types and the stress response
Summarize the primary and secondary appraisal of a stressor
Differentiate between cognitive and behavioral coping mechanisms
Differentiate among problem-focused, emotion-focused, and appraisal-focused coping in relation to stressors
Identify a patient's ability to cope with stress based on individual and stressor characteristics
Identify types of coping strategies
Identify selected defense mechanisms
Summarize ineffective coping behaviors
Explain the psychobiologic response of anxiety as it relates to stress
Describe the disequilibrium associated with response to stressors

Competency: Provide care for a patient with an ineffective coping response

Competency Builders:

Assess psychological responses to stress in a patient
Promote exploration of feelings when providing nursing care
Describe strategies to assist in stress reduction
Implement strategies to assist in stress reduction
Evaluate selected nursing interventions and suggest alternative measures

Unit: Psychology of Human Relations

Competency: Explain human growth and development

Competency Builders:

Describe characteristics of growth and development from conception to birth
Describe characteristics of growth and development from birth through preschool
Describe characteristics of growth and development from school age through adolescence
Describe characteristics of growth and development of the adult through the life span

Competency: Demonstrate appropriate communication techniques

Competency Builders:

Identify components of provider-client relationship
Identify ways to cope with stress
Identify uniqueness of individual (e.g., cultural, generational, social, ethnic)
Treat clients with respect and dignity
Identify assertive and aggressive responses
Differentiate between acceptable and unacceptable touching
Identify barriers to communication

Competency: Establish rapport

Competency Builders:

Describe proper manner for greeting a patient
Adapt communication to individual's ability to understand (e.g., functioning level, emotional state, and educational level)
Respond to verbal and nonverbal communication
Serve as liaison between physician, patient, and others
Solicit patient's understanding of communication
Translate medical terms into language patient can understand
Interpret patient's reaction to illness and disability
Describe individual, cultural and socioeconomic differences in people
Identify methods in which to communicate with patients or responsible party with sensory disorders
Support patient/responsible party during the grief process
Orient patient to policies, facilities, and staff
Respond to patient/responsible party in a therapeutic manner
Identify patient personality types
Treat patient with empathy and impartiality
Support patient's right to make decisions regarding care
Encourage ventilation of patient/responsible party's feelings

Competency: Follow established procedures for communication and documentation

Competency Builders:

Transmit reports of patient status
Demonstrate basic computer skills
Complete interdepartmental requisitions (e.g., therapies, procedures, tests)
Complete an incident report
Monitor accuracy in all communications
Initiate medical records according to institutional policies
Maintain medical records according to institutional policies
Identify need for documenting and reporting
Interpret patient-related documents participate in team conferences
Report change in patient status
Clarify physicians orders
Differentiate charting methods
Respond to request for service
Respond to request from patient's funding source
Notify patient or responsible party of changes required in treatment plan
Write instructions for use of patient equipment (e.g., orthosis, prosthesis)
Write instructions for a home therapy program
Witness a consent form
Create an informational display

Competency: Document patient progress

Competency Builders:

Record current treatment rendered and patient response
Include parameters in notes (e.g., subjective, objective, assessment, plan)
Use correct grammar, spelling, and approved abbreviations
Secure appropriate signatures
Write legibly
Use appropriate resources

Unit: First Aid and Medical Emergencies

Competency: Use emergency procedures

Competency Builders:

Identify emergency procedures
Contact local emergency assistance
Demonstrate first responder procedures
Acquire first aid certification
Acquire CPR certification

Competency: Perform first aid

Competency Builders:

Assist with first aid for wounds or fractures
Administer first aid to control bleeding
Administer first aid for shock
Administer first aid for burn patient
Assist with first aid for poisoned patient
Assist with choking patient
Assist with patient having seizure
Assist with syncopal patient

Competency: Maintain cardiopulmonary resuscitation (CPR) according to accrediting agency standards

Competency Builders:

Update CPR certification
Administer CPR to infants and children
Administer CPR to adults
Administer care for obstructed airways for infants, children, and adults

Competency: Respond to medical emergencies

Competency Builders:

Identify patient
Perform head to toe patient assessment
Assess patient needs
Describe signs and symptoms of emergency situations
Identify basic emergency equipment
Take appropriate action

Unit: General Administrative Duties

Competency: Perform scheduling and recordkeeping duties

Competency Builders:

Schedule patient appointments
Coordinate activities with other departments
Coordinate activities with community agencies
Schedule space and equipment for therapy
Maintain daily charges for equipment/treatment
Comply with reimbursement requirements
Maintain patient files/charts
Maintain patient attendance records
Schedule reoutine equipment maintenance and repair

Competency: Perform other departmental duties

Competency Builders:

Assist in dealing with vendors
Assist in maintenance of departmental budget
Assist in writing/revising job description
Assist in writing/revising forms (e.g., home programs, documentation forms)
Maintain departmental cleanliness
Maintain inventory/supplies

Competency: Manage reception area

Competency Builders:

Prepare reception area
Greet visitors and patients
Advise patient of office hours
Manage children accompanying patient
Identify ways to communicate with patients with sensory disorders
Screen non-patient visitors
Explain delays to patients physician's fees

Competency: Demonstrate telephone handling techniques

Competency Builders:

Place calls
Record telephone messages (e.g., date, time, initial calls)
Screen calls
Transfer calls
Obtain information for return calls
Handle emergency calls
Make arrangements for patient's admission to hospital
Make patient referrals
Phone prescriptions to pharmacy

Competency: Maintain appointment schedules

Competency Builders:

Write appointments legibly
Prepare appointment calendar
Record appointments
Prepare appointment cards
Maintain recall system
Confirm appointments
Schedule outpatient diagnostic tests
Make referral appointments for patients

Competency: Maintain medical records and laboratory reports

Competency Builders:

Obtain patient information
Prepare folder
Prepare charge documentation
Explain importance of records management
File information alphabetically or numerically according to office protocol
Retrieve patient record from file
Prepare cross-reference file
Process incoming medical reports
Purge records
Prepare reports concerning patient care, condition, census, accidents, and incidents
Maintain current documentation of patient status and care
Complete immunization records
Compile patient laboratory reports
Process completed laboratory reports
Document results from reference laboratories
Verify tests ordered and test received

Competency: Prepare office communications

Competency Builders:

Compose business correspondence
Edit business correspondence
Transcribe letters from dictating machine
Keyboard business correspondence
Print documents
Proofread for errors in correspondence
Complete appropriate consent forms
Address envelopes
Process incoming mail
Maintain files for correspondence
Classify outgoing mail
Label outgoing mail

Competency: Use office equipment

Competency Builders:

Operate calculator
Operate checkwriter
Operate computer
Operate copy machine
Operate fax machine
Operate multi-line telephone system

Competency: Demonstrate knowledge of different payment systems

Competency Builders:

Identify required procedures for private carriers
Identify required procedures for non-insured patients
Identify required procedures for health maintenance organization (HMO)
Identify required procedures for preferred provider organization (PPO)
Identify required procedures for independent practitioner association (IPA)
Identify required procedures for U.S. government employees (CHAMPUS)
Identify required procedures for Aid to Dependent Children (ADC)
Identify required procedures for general assistance (GA)
Identify required procedures for Medicare
Identify required procedures for Medicaid
Identify required procedures for worker's compensation

Competency: Perform diagnostic coding

Competency Builders:

Stay current with diagnostic coding changes
Complete forms for international classification of diseases (ICD-9 CM)
Complete forms for current procedural terminology (CPT)
Complete forms for health care procedural code (HCPC)
Complete forms for diagnostic related groups (DRG)
Complete forms for J-codes

Competency: Process insurance claims/forms

Competency Builders:

Define primary and secondary carriers
Define third party administrators
Explain payment and rejection procedures (e.g., co-pays, deductibles, errors)
Process quick-claim forms
Use procedure codes
Log and track insurance claims/forms

Competency: Perform financial functions

Competency Builders:

Apply basic bookkeeping fundamentals
Interpret and explain fees
Arrange financial agreements
Complete ledger
Prepare account summaries
Collect fees
Issue receipts
Maintain petty cash account
Prepare bank deposits
Verify invoices
Collect delinquent bills
Collect and post payments
Process credit card transactions
Prepare checks for signature
Prepare payroll
Reconcile bank statements, cash, and/or receipts
Complete Worker's Compensation forms and Medicare/Medicaid forms
Prepare schedule of accounts receivable
Prepare schedule of accounts payable
Maintain accounts receivable
Maintain accounts payable

Unit: Oral Anatomy and Pathology

Competency: Identify dento-osseous structures

Competency Builders:

Identify functions of dento-osseous structures
Identify bones and sutures of the skull
Identify cranial landmarks
Identify TMJ structure and ligaments

Competency: Identify facial muscles

Competency Builders:

Explain formation of facial expression
Explain function of mastication
Identify origin and insertion of suprehyoid muscles
Explain function of tongue and hyoid structure
Identify muscles of tongue

Competency: Explain neurology of head and neck

Competency Builders:

Define reflex arc
Describe function of cranial nerves
Define trigeminal nerve
Differentiate perception of and reaction to various types of pain

Competency: Describe vascular system of the head

Competency Builders:

Identify functions of blood
Identify major arteries and branches (e.g., external carotid, internal and external maxillary)
Identify purpose and location of viscera of head and neck

Competency: Describe developmental abnormalities

Competency Builders:

Differentiate normal and abnormal jaws
Differentiate normal and abnormal lips
Differentiate normal and abnormal mucosa
Differentiate normal and abnormal tongue
Differentiate normal and abnormal salivary glands
Differentiate normal and abnormal teeth (i.e., size, shape, number, structure, eruption)

Competency: Describe dental caries

Competency Builders:

Identify etiology of caries
Describe affects of saliva
Identify types and clinical features of caries
Describe histopathology of the caries process
Explain use of radiographs in caries detection

Competency: Describe pulpal and periapical disease

Competency Builders:

Identify etiology of pulpal disorders
Describe periapical infections and diseases of the supporting bone

Competency: Describe tissue changes in response to physical or chemical injury in the oral cavity

Competency Builders:

Describe effects of placement of restorations on the pulp
Describe bruxism
Classify fractures of the teeth
Describe ankylosis
Describe traumatic bone cyst
Compare sialolithiasis and mucous retention
identify consequences associated with wearing removable dental applicances
Describe effects of drugs and heavy metals on structures in oral cavity
identify iatrogenic factors

Competency: Describe neoplasms of oral cavity

Competency Builders:

Define benign and malignant
Describe fibroma, papilloma, hemangioman, tori, adenoma, and premalignant lesions (red and white)
Describe squamous cell carcinoma, adenocarcinoma, osteosarcoma, and metastatic neoplasms

Competency: Describe odontogenic cysts and neoplasms

Competency Builders:

Define cysts and neoplasms
Describe dental lamina cysts, laterial periodontal, follicular, periapical, calcifying, and keratocyst
Describe ameloblastoma, amelobastic fibroma, and odontoma

Competency: Describe treatment of patients with special needs

Competency Builders:

Describe treatment of gerodontic patients
Describe treatment of edentulous patients
Describe treatment of pediatric patients
Describe treatment of medically compromised patients

Unit: Dental Restoration

Competency: Describe tooth arrangement

Competency Builders:

Identify standards for dentogenics
Explain anterior tooth arrangement
Explain posterior tooth arrangement
Identify age, sex, and personality considerations for dynestheics
Identify characteristics of artificial teeth (anterior and posterior)

Competency: Identify edentulous arches

Competency Builders:

Describe the landmarks of the edentulous ridge
Describe the landmarks of the oral cavity

Competency: Describe jaw relationships

Competency Builders:

Explain fully adjustable articulators
Explain semi-adjustable articulators
Explain non-adjustable articulators
Explain face-bow transfer
Explain the mounting of casts
Describe interrelationships of opposing cusps
Describe articulation and occlusal interaction
Describe occlusal morphology
Describe mandibular movement

Competency: Describe impression and cast materials

Competency Builders:

Differentiate between elastic and inelastic impression materials
Identify types of impression materials (e.g., impression compound, gypsum products, zinc oxide eugenol, impression wax, reversible hydrocolloid, irreversible hydrocolloid, rubber base, silicon rubber)
Identify standards used for preliminary impressions
Demonstrate the care and handling of preliminary impressions
Identify standards used for final impressions
Demonstrate the care and handling of final impressions
Explain manipulation and setting time as it relates to thermal conductivity
Explain manipulation and setting time as it relates to dimensional stability

Competency: Use impression trays

Competency Builders:

Differentiate between manufactured impression trays and final impression trays
Fabricate various final custom impression trays

Competency: Use baseplate materials

Competency Builders:

Explain the use of baseplates
Fabricate various types of baseplates

Competency: Use occlusal rims

Competency Builders:

Explain use of occlusal rims
Describe wax contour and dimensions
Pour model for impressions
Fabricate occlusal rims

Competency: Describe model pouring and die preparation techniques

Competency Builders:

Explain model pouring for fixed restorations
Differentiate between wet pin and dry pin dowel techniques
Describe model die cutting
Describe marginal ditching techniques
Describe model spacing techniques
Observe model pouring and die preparation techniques

Competency: Describe restorative waxing techniques

Competency Builders:

Explain positive waxing
Describe PKT waxing techniques
Differentiate among single, partial, and full coverage restorations
Differentiate among onlays, inlays, 3/4 crowns, and MOD patterns
Identify components of veneer crown designs
Identify components of cantilever bridge design
Identify components of muli-unit restorative designs
Observe single-unit waxing of posterior crowns

Competency: Describe crown and bridge spruing and investing techniques

Competency Builders:

Explain stress and wax pattern distortion
Explain burn-out procedures
Explain casting and recovery
Explain spruing techniques
Explain investing techniques
Observe spruing and casting techniques
Observe burn-out, casting, and recovery procedures

Competency: Describe metal adaptation and finishing

Competency Builders:

Explain internal adaptation
Explain marginal fit
Explain occlusal adaptation
Explain finishing and polishing
Observe metal adaptation and finishing

Competency: Explain denture flasking

Competency Builders:

Explain the theory of wax elimination
Describe denture flasking
Describe wax removal
Observe denture recovery

Competency: Explain denture processing

Competency Builders:

Explain denture packing
Explain acrylic preparation
Identify various types of denture acrylics
Differentiate between cross-linking and curing
Observe denture processing

Competency: Explain denture recovery

Competency Builders:

Describe care and handling of denture recovery
Describe ultrasonic cleaning
Observe denture recovery

Competency: Explain selective grinding

Competency Builders:

Describe remounting
Describe processing errors
Describe rules and procedures for selective grinding
Observe selective grinding

Competency: Explain denture finishing and polishing

Competency Builders:

Describe denture base finishing
Describe pumicing
Describe stippling
Describe polishing
Observe denture finishing and polishing

Competency: Describe denture fabrication

Competency Builders:

Differentiate between impressions and models
Describe recorded occlusal rims and scribed landmarks
Describe occlusin, mallocclusion, and articulation
Describe tooth mold and shade selection
Describe anterior and posterior tooth arrangement
Identify dimensions of tissue contour
Observe denture fabrication techniques

Competency: Explain denture repair and maintenance

Competency Builders:

Describe denture base fractures
Describe denture tooth replacement
Differentiate between denture relines and rebases
Observe denture repair and maintenance

Unit: Partial Denture Fabrication

Competency: Describe partial denture design

Competency Builders:

Identify components of a partial denture design
Identify various clasp designs
Identify major and minor connectors
Identify direct and indirect retention
Explain surveying and path of insertion
Explain desirable and undesirable block out
Observe partial denture design

Competency: Describe refractory model duplication

Competency Builders:

Explain duplication of master models
Explain refractory model investment
Describe hydrocolloid duplication
Describe refractory model preparation
Observe duplication of refractory models

Competency: Describe wax pattern adaptation

Competency Builders:

Differentiate among various wax patterns
Explain wax pattern adaptation
Identify various wax pattern components
Observe wax pattern adaptation

Competency: Describe partial framework spruing and investing techniques

Competency Builders:

Explain stress and wax pattern distortion
Explain burn-out procedures
Differentiate casting and recovery
Explain spruing techniques
Explain investing techniques
Observe spruing and casting techniques
Observe burn-out, casting, and recovery techniques

Competency: Describe metal adaptation and finishing

Competency Builders:

Explain model adaptation
Explain clasp fit to abutment teeth
Explain stone shaping and contouring
Describe electro-polishing techniques
Describe rubber wheeling the framework
Describe polishing procedures
Observe metal adaptation and finishing techniques

Unit: Orthodontics

Competency: Explain orthodontic treatment as a dental specialty

Competency Builders:

Identify fixed appliances
Identify removable appliances
Describe functional appliances
Explain passive, active, and guided-appliance formats
Describe preventive, corrective, and interceptive concepts

Competency: Explain components of orthodontic appliances

Competency Builders:

Identify clasping, retention and wire systems
Describe autopolymer resin processing
Describe resin finishing/polishing
Explain heat-cured, injected, vacuum-formed, and light-cured resins
Identify banding and soldering techniques
Explain expansion screws, springs, hooks, and other auxiliaries

Competency: Explain the principles of wire bending

Competency Builders:

Complete aptitude testing
Identify instruments
Identify wire types, sizes, and uses
Demonstrate wire component formation

Competency: Demonstrate orthodontic appliance repair

Competency Builders:

Apply autopolymerizing repair procedures
Apply torch soldering
Apply electric spot-soldering

Competency: Explain temporomandibular splints

Competency Builders:

Identify maxillary and mandibular splints
Identify flat plane splints
Identify repositioning splints
Describe mouthguards and nightguards
Differentiate between hard and soft materials

Competency: Explain orthodontic records

Competency Builders:

Demonstrate photographic techniques
Demonstrate radiographic techniques
Demonstrate cephalometric techniques
Demonstrate impression techniques
Demonstrate study model fabrication

Competency: Describe miscellaneous functions

Competency Builders:

Explain headgear fabrication
Explain facemask fabrication
Describe indirect bonding techniques

Competency: Describe orthodontic office procedures

Competency Builders:

Explain banding techniques, including sizing and cementation
Explain bracket bonding and placement
Demonstrate ligature and elastic placement

Unit: Dental Morphology

Competency: Explain dental physiology

Competency Builders:

Describe surfaces and ridges
Identify tooth/oral landmarks
Explain division into thirds
Identify proximal contact areas
Identify interproximal contact areas and spaces
Differentiate between embrasures and escapements
Describe protective contours
Describe cervical curvatures

Competency: Explain arrangement of teeth and occlusion

Competency Builders:

Explain dental arch formation
Describe compensating curves of the dental arches
Describe contact relations of the teeth
Describe occlusal contact and intercuspid relations

Competency: Describe deciduous teeth

Competency Builders:

Differentiate incisors and canines
Identify molars
Explain occlusion

Competency: Describe permanent teeth

Competency Builders:

Describe anterior arrangement (i.e., cental and lateral incisors, canines)
Describe posterior arrangement (i.e., first and second premolars; first, second, and third molars)

Unit: Dental Materials I

Competency: Demonstrate knowledge of dental laboratory materials

Competency Builders:

Identify gypsum materials
Pour models and dies
Describe dental waxes
Indicate uses of dental waxes
Wax-up for metal fabrication
Wax-up for resin processing
Describe impression materials for laboratory use
Explain model duplication media
Identify denture base materials by color and characteristics
Discern similarities and differences of denture base materials
Explain the various metals used in dentistry, the metals used in fixed and removable prostheses
Describe the characteristics and properties of porcelains and ceramic materials
List the various separating agents
List composition of various separating agents
Identify fluxes and antifluxes
Describe the indications and differences of various laboratory alcohols
List the amount of pickling agents
Define wetting agents
Describe the uses of wax solvents
Describe the composition of wax solvents
Identify the variety of abrasives used in finishing appliances
List the polishing agents for resins
List the polishing agents for metals
List the polishing agents for ceramics
List the properties of laboratory gases
List the uses of laboratory gases
List the safe handling of laboratory gases
Describe miscellaneous laboratory materials and agents

Competency: Explain dental laboratory material properties

Competency Builders:

Differentiate force and strain
Define compressive, tensile, and shearing
Differentiate between elastic limit and modulus of elasticity
Differentiate between malleability and ductility
Differentiate between flow and creep
Describe the Knoop hardness test
Describe the Brinell hardness test
Explain linear coefficient of thermal expansion
Differentiate between adhesion and viscosity

Unit: Dental Materials II

Competency: Demonstrate use of impression materials

Competency Builders:

Describe the different impression materials
Identify types of material set
Explain mixing ratios of impression materials
Describe the mixing, working and setting times
Identify factors affecting setting time
Describe proper handling of different impression materials

Competency: Use dental cements, liners, and varnishes

Competency Builders:

Explain the purpose of dental cements, liners, and varnishes
Identify types of dental cements, liners, and varnishes (e.g., zinc phosphate, zinc oxide eugenol, EBA cement, polycarboxylate, glass ionomer)
Differentiate between light cure and self cure liners
Describe the armamentarium for dental cements, liners, and varnishes
Explain material ratios of gypsum products
Describe the mixing and setting time
Identify factors effecting setting time

Competency: Use restorative materials

Competency Builders:

Explain the purpose of using restorative materials
Identify components of restorative materials use
Describe the armamentarioum for restorative materials use
Explain material ratios of mercury and alloys
Explain the purpose of using ketac silver
Describe the armamentarium for ketac silver use
Demonstrate the application of ketac silver
Explain the purpose of using composites
Identify types of composites
Describe the advantages and disadvantages of composite use
Describe the aramentarium for composite use
Explain material ratios of composite
Describe the mixing and setting time
Describe application methods for composites
Explain acid etching
Identify factors affecting setting time
Identify factors affecting mixing time
Define polymerization
Define monomers
Define polymer
Define curing
Define catalyst
Explain the properties of shade selection and its armamentarium
Explain the bonding types and procedure
Explain the different bonding products

Competency: Demonstrate dental laboratory procedures

Competency Builders:

Pour models and dies
Explain the purpose of using gypsum products
Identify types of gypsum products
Describe the armamentarium for gypsum product use
Explain material ratios of gypsum products
Describe the mixing and setting time
Define exothermic reaction, calcining, gauging water, and refractory
Explain model trimming
Identify factors affecting setting time
Fabricate impression trays
Assemble materials and equipment
Adapt spacer
Adapt acrylic
Trim finished tray
Fabricate gypsum models
Select gypsum material
Rinse and dry impressions
Apply mathematical ratios
Pour edentulors models
Trim models
Articulate models

Unit: Dental Laboratory Procedures

Competency: Describe dental material factors

Competency Builders:

Describe the implication of biting forces
Describe the implication of temperature changes
Describe the implication of esthetic forces
Describe the implication of acidity
Describe the implication of microleakage
Describe the implication of galvanic shock
Describe the implication of retention

Competency: Construct occlusion rims

Competency Builders:

Adapt baseplate
Apply wax
Trim and smooth wax

Competency: Assist with fabrication of temporary crowns

Competency Builders:

Construct and trim temporary crowns
Adapt and prepare preformed crowns

Competency: Prepare laboratory case for shipping

Competency Builders:

Complete laboratory authorization
Write legibly
Disinfect all materials prior to shipping
Protect wet alginates from distortion
Package case for shipment
Apply postage
Ship case

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